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Foxidonta, A Solomon Island Trochomorphid Land Snail

BY

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(5 Text figures)

CLENCH (1950) described *Foxidonta stevensoni* as an endodontid land snail. Examination of paratypes had convinced me that it was not an endodontid, since the characteristic endodontid reticulated microsculpture was absent. I had surmised that it might be a camaenid near *Coliolus*, but this was only on the basis of shell features.

Through the kindness of Rev. H. E. J. Biggs, I obtained several preserved specimens and was able to study the gross anatomy. Rather to my surprise, *Foxidonta* is a trochomorphid land snail very near to *Videna* and *Brazieria* in anatomical structures, although obviously differing in shell form and sculpture.

For providing the material to be dissected, I am deeply indebted to Rev. Biggs. The drawings of the foot, pallial region and genitalia are by Harry Cleaver, a student at Antioch College. The other drawings are by Miss Marcia Oddi, Temporary Summer Assistant, Chicago Natural History Museum.

A redescription of the genus follows:

Genus *Foxidonta* CLENCH, 1950

Aulacopod sigmurethra, radular teeth with elongated basal plates, marginals bicuspid. Spermatheca inserting on base of penis. Epiphallus entering penis apically, penial retractor muscle inserting at junction of epiphallus and penis. Penis with a simple pilaster apically, lower portion with several small pilasters radiating in a fan shape from base of a groove. Pallial region without distinct venation, some scattered black and white color patches.

Shell very elevated, conical, strongly carinated. Apex with weak spiral lines above, developing radial growth striae near its end. Lower whorls with irregular, prominent, low, triangular ribs, usually with very long periostacal extensions. Umbilicus narrowly open, columellar lip moderately reflected.

The lack of distinct pallial venation, sausage-shaped kidney, bicuspid lateral radular teeth with elongated basal plates, presence of pedal grooves, and insertion of the spermatheca on the penial side of the penioviducal angle at once relate *Foxidonta* to the *Videna*, *Brazieria*, *Hogolua*, *Kondoa* complex of Indonesia and the Caroline and Palau Islands. *Foxidonta* differs primarily in the simple internal structures of the penis. The other genera have much more complicated penial structures. Conchologically, *Foxidonta* differs by its larger size, conical shape, lack of parietal dentition, the presence of heavy radial growth ribs and the very elevated spire. The most similar shell is the much smaller *Videna (Peleliua) pagodula* (SEMPER, 1870).

A brief description of the systematically important anatomical features follows.

Foot with undivided sole, pedal grooves (Figure 1) moderately prominent, uniting across the tail. No caudal foss or horn. Pallial region (Figure 2) with sausage-shaped kidney (K) about twice as long as the pericardium (H) and one third the length of the pallial cavity. Hindgut (HG) and secondary ureter (KD) opening at base of pneumostome. Principal pulmonary vein (HV) without branches, surface of pallial wall with weak

striation and scattered color patches. A triangular lobe of the mantle gland intrudes onto the pallial surface

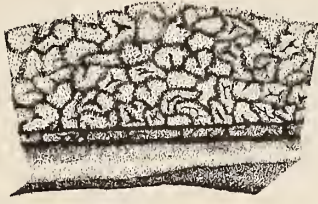


Figure 1: *Foxidonta stevensoni*. Portion of foot showing pedal grooves and the foot sole forming lower part of lateral margin.

from the mantle edge. Genitalia (Figure 3) typically trochomorphid with ovotestis (not shown) of groups of

clavate alveoli imbedded in the liver. Hermaphroditic duct (GD) long and convoluted, carrefour (X) sacculate and distended. Uterus (UT) with many folds, prostate (DG) normal. Free oviduct (UV) with upper portion a swollen, glandular sac with internal groove that lies next to the vas deferens. After an abrupt narrowing of the glandular portion, the moderately swollen lower free oviduct is thin walled with strong internal pilasters before joining the spermatheca and penis to form the common atrium. Spermatheca (S) a short, apical sac loosely bound to glandular zone of free oviduct, base entering on penial side of penioviducal angle. Vas deferens (D) a narrow tube running from the prostate to epiphallus, moderately connected by tissue to the walls of free oviduct and penis, tightly bound to penioviducal angle. Epiphallus (E) abruptly enlarged, entering penis apically without sharp differentiation. Penial retractor

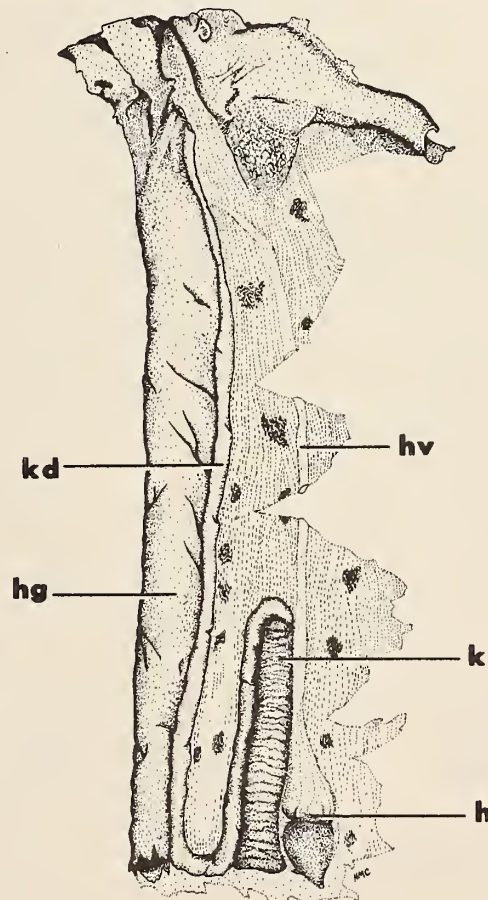


Figure 2: *Foxidonta stevensoni*. Pallial region showing kidney (K), pericardium and heart (H), hindgut (HG), secondary ureter (KD) and pulmonary vein (HV).

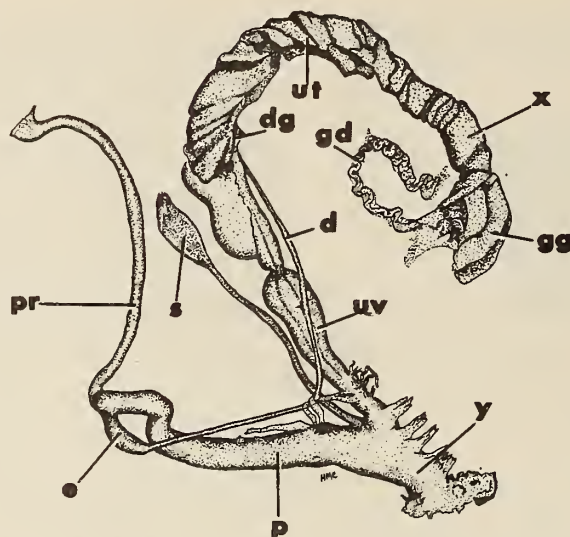


Figure 3: *Foxidonta stevensoni*. Genitalia showing hermaphroditic duct (GD), albumen gland (GG), carrefour (X), uterus (UT), prostate (DG), free oviduct (UV), spermatheca (S), vas deferens (D), epiphallus (E), penial retractor (PR), penis (P), atrium (Y).

(PR) arising on diaphragm, inserting on apex of penis. Penis (P) a slim, slightly twisted, muscular tube. Upper portion with one narrow, prominent, crenulated pilaster running from entrance of epiphallus down to slightly above the midpoint of penis. There it fans out into a series of small, radially arranged pilasters. Atrium (Y) short, muscular with irregular pilasters inside, possessing strong muscular attachment to the body wall.

Jaw (Figure 4) with low median lobe, weakly transversely striate, without longitudinal markings. Radula

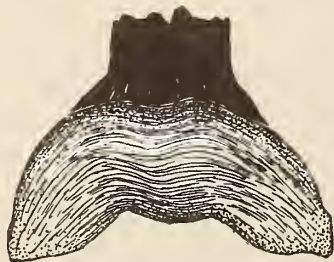


Figure 4: *Foxidonta stevensoni*. Jaw with part of attachment membrane.

with 122 rows on mounted example, 10 laterals and 37 marginals. Radular teeth (Figure 5) typically trochomorphoid, central with barely visible ectocones, laterals weakly bicuspid, marginals strongly bicuspid.

Remarks: The extension of the videnoid series of Trochomorphinae into Melanesia is not surprising. Discovery that *Foxidonta* is a trochomorphid does suggest that some of the New Guinea *Coliulus* may prove to be trochomorphids rather than camaenids, since the shells of such New Guinea species as *C. arfakiensis* (TAPPARONE-CANEFRI, 1887), *C. canefriana* E. A. SMITH, 1895

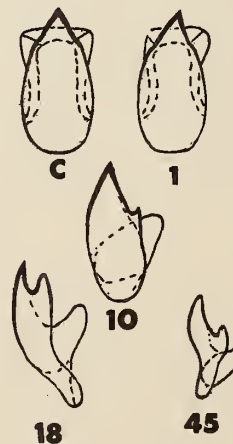


Figure 5: *Foxidonta stevensoni*. Radular teeth showing central, first lateral, tenth lateral, and the 18th and 45th teeth, both marginals.